

Serial No. 10/085,527

Atty. Doc. No. 1999P03591WOUS

Amendments To the Claims:

Please amend the claims as shown. Applicant reserves the right to pursue any canceled claims at a later date.

1. (currently amended) A method for the surface ~~treatment~~ preparation of a metal component ~~(1)~~ having a curved ~~component~~ surface ~~(3)~~ to accept a ceramic coating, comprising:

~~removing material from the component surface (3) along a contour line on the component surface (3) with a particle jet (7) that is generated from a particle source (5), the particle jet having a blasting distance (d), a blasting intensity, a blasting angle (α) and a blasting time, the particle jet characterized in that at least one of the distance, intensity, angle and time is matched to the contour line in such a way that a homogeneous surface roughness is established along the contour line.~~

measuring a contour line geometry of the curved surface;

inputting the measured geometry into a control system; and

controlling a plurality of spray parameters of the ceramic coating via the control system based on the geometry to direct a particle source toward the metal component, the spray parameters comprising: a blasting distance, a blasting intensity, a blasting angle and a blasting time such that at least one of the parameters remains constant during the surface preparation.

2. (currently amended) The method as claimed in claim 1, wherein ~~the matching at least one~~ of the jet spray parameters automatically remains constant during the spraying operation ~~takes place by the control system.~~

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3. (currently amended) The method as claimed in claim 1, wherein the particle source ~~(5)~~ and the component ~~(1)~~ are moved relative to one another the metal is a superalloy.

4. (currently amended) The method as claimed in claim 1, wherein the blasting distance of the particle source (5) is moved relative to the component ~~(1)~~ in such a way that the blasting distance (d) is remains constant.

5. (currently amended) The method as claimed in claim 1, wherein the particle source ~~(5)~~ is moved relative to the metal component ~~(1)~~ in such a way that so that the blasting angle ~~(α)~~ is remains constant.

6. (currently amended) The method as claimed in claim 1, wherein the component ~~(1)~~ has a base body ~~(11)~~ with a base material ~~(13)~~, the base body ~~(11)~~ having the component surface ~~(3)~~ which, for a first coating ~~(15)~~ to be applied to the base body ~~(11)~~, is treated with a first coating material ~~(17)~~.

7. (currently amended) The method as claimed in claim 6, wherein the first coating material ~~(17)~~ used is an MCrAlX alloy, where M represents one or more elements comprising iron, cobalt and nickel, Cr represents chromium, Al represents aluminum and X represents one or more elements selected from the group consisting of yttrium, rhenium and the rare earths.

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8. (currently amended) The method as claimed in claim 6, wherein the first coating (15) also has the component surface (3) which, for a second coating (19) to be applied to the component (1), is treated with a second coating material (21).

9. (currently amended) The method as claimed in claim 1, wherein the component (1) has a base body (11) with a base material (13), a first coating (15) comprising a first coating material (17) being applied to the base body (11), and the coated component (1), for a second coating (19) to be applied to the component (1), being treated with a second coating material (21).

10. (currently amended) The method as claimed in claim 8, wherein, in the coating process, a ceramic is used as the second coating material (21).

11. (canceled)

12. (currently amended) The method as claimed in claim 1, wherein the component (1) used is a turbine rotor blade (23), a turbine guide vane or a heat shield element (25) of a combustion chamber.

13. (currently amended) The method as claimed in claim 1, wherein the blasting angle (α) on the component surface (3) is approximately 20° to 90°.

14. (canceled)

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15. (canceled)

16. (canceled)

17. (canceled)

18. (currently amended) A method for surface ~~treating~~ preparation of a metal component ~~(1) of a gas turbine~~ having a curved surface ~~(3)~~ to accept a ceramic coating, comprising:

~~removing material from the component surface (3) along a contour line on the component surface (3) using a particle jet (7) from a particle source (5) having blasting angle (α) of approximately 20° to 90°, a blasting distance (d), a blasting intensity, and a blasting time,~~

~~wherein at least one of the distance, intensity, angle and time of the particle jet (7) is matched to the contour line to establish a homogeneous surface roughness along the contour line.~~

measuring a contour line geometry of the curved surface;

converting the measured geometry into input data; and

inputting the data into a control system, the control system configured to control a plurality of spray parameters based on the data and direct a particle source toward the metal component,

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wherein at least one of the parameters remains constant during the surface treatment and the surface preparation results in the curved surface having a substantially uniform surface roughness.

19. (currently amended) The method as claimed in claim 18, wherein the particle source (5) is moved relative to the component (1) ~~in such a way so~~ that the blasting distance (d) ~~is~~ remains constant.

20. (currently amended) The method as claimed in claim 18, wherein the particle source (5) is moved relative to the component (1) in such a way that the blasting angle (α) ~~is~~ remains constant.

21. (new) The method as claimed in claim 1, wherein the blasting distance is measured from the particle source to a point of impingement of a the spray on the metal component surface.

22. (new) The method as claimed in claim 1, wherein the blasting angle is measured as an angle between a direction of the spray and a local normal to the metal component surface at a point of impingement.

23. (new) The method as claimed in claim 1, wherein the blasting intensity is measured as a flow rate of the particle.

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24. (new) The method as claimed in claim 1, wherein the blasting time is measured as a residence time of the spray on a selected section of the contour line.

25. (new) The method as claimed in claim 18, wherein the spray parameters include: a blasting distance, a blasting intensity, a blasting angle and a blasting time.